

CHAPTER 9

USE OF AUTOMATED SIGNAL OPERATION INSTRUCTION (SOI) 113-573-8006

9-1. CONDITIONS.

Given an SOI KTV 1600, KTC 1400, a radio, an operational radio net, scratch paper and a pencil.

9-2. STANDARDS.

This task has been performed correctly when the soldier does the following in 10 minutes.

- a. Lists the item number of the SOI extract.
- b. Lists a radio station call sign.
- c. Lists a radio net frequency.
- d. Lists an item number identifier.
- e. Enters a radio net in which you do not normally operate.
- f. Lists a challenge and reply authentication.

9-3. TRAINING INFORMATION OUTLINE.

- a. List an SOI Item number.
 - (1) Get the SOI/extract for your unit.
 - (2) Find the item number for the unit you want. See Figure 9-1. Look down the left-hand column to find the unit (2ND BDE, 1-80 IN BN). Then look immediately to the right of the unit to find the Item Number (8C).

KTV 1600C (PROTECTIVE MARKING)		1
INDEX		
ITEM	ITEM NO	
1-77 IN BN	7B	
1-78 IN BN	7C	
2ND BDE	8	
1-3 AR BN	8A	
1-79 IN BN	8B	
1-80 IN BN	8C	
3RD BDE	9	
1-4 AR BN	9A	
1-81 IN BN	9B	
1-82 IN BN	9C	
DIVARTY	10	
1-40 FA BN	10A	
1-41 FA BN	10B	
1-42 FA BN	10C	
1-43 FA BN	10D	
DISCOM	11	
52ND MED BN	11A	
52ND S&T BN	11B	
52ND MAINT BN	11C	
1-23 CAV SQDN	12	
1-23 D/CAV SQDN	12A	
1-441 ADA BN	13	
INDEX	2 of 5	1

Figure 9-1. Example of a KTV 1600C index

(3) Turn to the Item number page for the time period you are using. See Figure 9-2. The Item number is located at the upper and lower right of the page. The time period is located at the top right of the page. Example: Time Period 01, Item number 8C.

		(PROTECTIVE MARKING)		TIME PERIOD 01		8C	
1-80 IN BN EXTRACT							
1-80 IN BN	Z6Z	57 85	CMD	COMMANDER	37		
		49 65	A/L	XO	26		
HHC/1-80 IN	R1L			S1	59		
A/1-80 IN	Q3V	36.05	CMD	S2	65		
1/A/1-80	I8C	51.40		S3	89		
2/A/1-80	W1J	50.20		S4/SUP SGT	45		
3/A/1-80	C4K	51.20		MTR OFF/SGT	29		
WPNS/A/1-80	S6Y	65.60		C-E O/COMM CH	25		
B/1-80 IN	I3B	56.65	CMD	MED OFF/MEDIC	95		
1/B/1-80	P6P	50.10		FO 4	18		
2/B/1-80	L0B	51.00		FO 5	78		
3/B/1-80	S3I	49.90		FO 6	06		
WPNS/B/1-80	E4V	34.55		FSO/FIST CHIEF	10		
C/1-80 IN	U4P	44.25	CMD	NCS/TOC/CP	08		
1/C/1-80	M8O	50.60		FDC	16		
2/C/1-80	Y6M	51.70		PLT/SEC/TM LDR	44		
3/C/1-80	V3X	49.60		PLT/SEC/TM SGT	98		
WPNS/C/1-80	Z4N	34.85		TM/SQD/SEC 1	63		
CSC/1-80 IN	Q6C	68.15	CMD	TM/SQD/SEC 2	51		
AD/CSC/1-80	N2L	45.95		TM/SQT/SEC 3	77		
AT/CSC/1-80	B8G	37.25		TM/SQT/SEC 4	69		
SCT/CSC/1-80	V1R	47.40		TACP	31		
MORT/CSC/1-80	K9T	33.50		MAINT OFF	58		
GSR/CSC/1-80	C9A	61.05		ENGR OFF	41		
1-80 AJ/ALTN 1		74.20		CSM/SGM/1SG	40		
1-80 AJ/ALTN 2		32.25		OFF ASST	H		
2 BDE	X8A	40.05	CMD	ENL ASST	O		
2 BDE RETRANS	T7N	63.40	RTS	RTO/DRIVER	F		
MEDEVAC (P)	W5X	32.75	MED	SIGN	HITS		
				C/SIGN	YEAR		
1-80 IN BN EXTRACT						8C	

9-2. Example of a Unit SOI Extract.

b. List a radio station call sign. See Figure 9-2.

(1) Look down the left-hand column to find the unit. Example: Weapons platoon of Company C, 1-80 Infantry Battalion (WPNS/C/1-80).

(2) Then look immediately to the right of the unit to find the call sign (Z4N).

(3) Find the suffix that designates the person or subordinate element of the unit by reading down the list of suffixes on the right side of the page and reading the two-digit suffix for that element. (The suffix for PLT LDR is 44.) Add it to the previous call signs you found. You now have the five-character call sign for the element/person (Z4N44).

c. List a radio net frequency. See (Figure 9-2). Look to the immediate right of your call sign. You now have the operating frequency of the weapons platoon (34.85MHz).

d. List an item number identifier.

(1) With the item number for your unit (see paragraph b. (1)), turn to the Item Number Identifiers section of your SOI/extract. See (Figure 9-3).

(2) Find the column for the time period you are in (Time period 01). The time periods 1-10 are the column headings across the top of the sheet.

(3) Read down this time period column until you find the Item Number for your unit. Example: The Item Number for 1-80/IN BN is 8C.

(4) Read the two-letter code in the left column opposite your unit Item Number (CF).

e. Enter a radio net in which you do not normally operate.

(1) Turn to the Quick Ref Maj Subor Elms & CBT BNS item of our SOI/extract. There are two sets, one for call signs (Figure 7-4) and one for frequencies (Figure 9-5).

(PROTECTIVE MARKING)										
KTV 1600C										23
ITEM NUMBER IDENTIFIERS										
	01	02	03	04	05	06	07	08	09	10
CA	9C	14	11B	10	16G	10B	11A	21	16G	3D
CB	16A	16J	13A	9C	7B	5A	22B	9C	12	4A
CC	16E	22D	16C	8B	9B	6A	21	3F	22E	3
CD	3B	22B	16E	7A	8B	7B	13	16B	11C	9B
CE	10	16	15	16D	18	13	3A	7C	21	12
CF	8C	16A	16F	22E	3	4A	16A	6B	12A	7B
CG	9A	13	9B	16I	22B	3B	6D	6A	19	10A
CH	22B	16G	5	16G	22	6C	10	16A	16C	11B
CI	13	3F	3A	19	16B	8C	5A	16D	18	9
CJ	7B	22A	11C	4A	10C	22B	8	6	4	16G
CK	3E	3A	16G	3A	6B	22E	6	8	6	4
CL	8	6	21	13A	16J	8	16C	3E	4A	16I
CM	19	16D	22C	16A	8C	16E	16E	13A	22C	3F
CN	21	11A	20	8A	20	3	16I	22	11A	22A

Figure 9-3. KTV 1600C Item Number Identifiers.

(PROTECTIVE MARKING)						
KTV 1600C CALL SIGNS						
QUICK REF	MAJOR	SUBOR	ELMS & CBT			BNS
			01	02	03	04 05
52D DIV			K6P	D4J	N3D	Y2E L5D
1 BDE			V4Y	M8R	Z4S	H1S X2E
2 BDE			X8A	Z6N	K2J	K7H V9A
3 BDE			V8K	B1P	V8Q	K8W R4I
DIVARTY			C9L	X0V	E4H	S2B A0H
DISCOM			T6I	Q0Q	U4F	V6R R1V
1-2 AR BN			R4S	B8W	A7G	H4I D9L
1-3 AR BN			X3W	Z9S	L6P	H2M S4K
1-4 AR BN			X4R	R7X	T1B	I9F C1Y
1-40 FA BN			D2U	E1F	W4W	A8Q A5P
1-41 FA BN			S0D	Z6T	W0M	Z6X H1X
1-42 FA BN			T0X	S5D	Q2Y	P8A S2R
1-43 FA BN			G2G	L3G	J7I	Q0L Q9Q
1-77 IN BN			A1H	N8L	V8R	W4T X2S
1-78 IN BN			Q0F	M7I	Z2C	A3K G1M
1-79 IN BN			K7O	Z5K	D5N	G7C N8F
1-80 IN BN			Z6Z	H6H	M4V	K2U M9N
1-81 IN BN			J5N	X9E	R5U	L1Z Y2W
1-82 IN BN			V5E	C6U	R2T	D8N G7U
1-23 CAV SQDN			N0C	C8Y	N0L	E7O F5O
1-441 ADA BN			Y7B	M2B	U7E	J2G V1C
52D ENBN			D6J	S1Z	D6X	D4Y B9T
52D SIG BN			P4V	G4A	K7Z	B9P R8B
52D CAB			J5T	L6C	R5O	M3V D4Z
312 CEWI BN			J3Q	P8O	M4A	U2J G2G
MEDEVAC			W5X	L5U	X9S	Z7X
52D MP CO			S8M	Y4M	T8K	U4D R8.I
QUICK REF	MAJOR	SUBOR	ELMS & CBT			BNS
						3

Figure 9-4. KTV 1600C Call Signs.

(PROTECTIVE MARKING)					
KTV 1600C					
FREQUENCIES					
QUICK REF	MAJOR	SUBOR	ELMS &	CBT	BNS
	01	02	03	04	05
DIV CMD	38.05	63.75	68.10	65.45	59.15
1BDE CMD	51.65	68.30	46.80	62.70	64.65
2 BDE CMD	40.05	50.50	39.55	69.50	51.50
3 BDE CMD	55.05	67.50	44.35	63.20	69.85
DIVARTY CF 1	54.50	69.20	60.90	42.90	67.00
DISCOM CMD	49.95	34.05	64.45	58.10	56.00
1-2 AR CMD	34.65	37.30	66.95	44.90	64.45
1-3 AR CMD	46.25	31.70	66.70	52.90	55.65
1-4 AR CMD	66.85	40.30	60.15	40.90	69.55
1-40 FA CF	61.90	36.60	49.85	43.60	38.45
1-41 FA CF	56.05	46.50	61.70	39.35	58.35
1-42 FA CF	34.30	65.30	62.75	60.80	34.45
1-43 FA CF	58.20	49.15	64.00	48.90	51.60
1-77 IN CMD	44.20	46.00	41.65	32.35	50.05
1-78 IN CMD	32.65	31.95	54.50	62.45	62.75
1-79 IN CMD	47.75	53.10	52.35	39.45	53.15
1-80 IN CMD	57.85	55.35	30.55	64.60	66.35
1-81 IN CMD	48.55	35.15	39.90	67.30	35.85
1-82 IN CMD	38.40	48.40	62.95	33.35	47.85
1-23 CAV CMD	43.10	47.90	42.40	37.90	62.15
1-441 ADA CMD	67.65	38.65	58.25	46.35	37.45
52D EN CMD	51.60	47.55	47.40	31.60	63.45
52D SIG CMD	32.80	46.70	51.10	58.20	34.35
52D CAB CMD	54.70	54.95	35.75	53.35	34.05
312 CEWI BN CMD	30.65	55.20	38.90	63.40	69.95
MEDEVAC P	32.75	32.75	32.75	32.75	32.75
MEDEVAC A	53.55	55.40	55.55	40.40	46.85
QUICK REF	MAJOR	SUBOR	ELMS &	CBT	BNS
					3

Figure 9-5. XTV 1600C Frequencies.

(2) Look down the left-hand column of the Call Signs set to find the unit (1-3 AR BN). Then look immediately to the right of the unit to find the call sign under the correct Time Period column. Example: 1-3 AR BN under Time Period 01, the call sign is X3W. See Figure 7-4.

(3) Turn to the Frequencies set and repeat the procedures to find the frequency of the battalion command net (1-3 AR BN, Time Period 01, 46.25MHz). See Figure 9-5.

(4) Set your radio to the frequency for the Net Control Station (NCS).

(5) Call the NCS and request permission to enter the net. Example Call. X-RAY THREE WHISKEY ZERO EIGHT, THIS IS ZULU FOUR NOVEMBER FOUR FOUR. REFER TO CHARLIE FOXTROT. (CF is the Number Identifier for your unit). I HAVE TRAFFIC FOR X-RAY THREE WHISKEY EIGHT NINER. REQUEST PERMISSION TO ENTER YOUR NET. OVER.

(6) Give the correct reply when the NCS challenges. Example: (Challenge by the NCS.) ZULU FOUR NOVEMBER FOUR FOUR, THIS IS X-RAY THREE WHISKEY ZERO EIGHT. AUTHENTICATE CHARLIE HOTEL. OVER. (Reply by you or the caller.) X-RAY THREE WHISKEY ZERO EIGHT, THIS IS ZULU FOUR NOVEMBER FOUR FOUR. I AUTHENTICATE LIMA. OVER.

NOTE

The station being called will make the first challenge. Both stations must find the correct reply so that the station being called can authenticate the reply by the calling station. If the called station does not respond to the challenge within a reasonable time, the station calling will require another authentication using a different challenge. Either station can challenge the other if there is a reason to believe the other station is not a friendly station.

(7) When the NCS grants permission to enter the net, find the call sign for the unit you want.

(8) Call the unit you want and send your message.

(9) After you finish sending your message, call the NCS and ask to leave the net. You should be required to authenticate.

f. List a challenge and reply authentication.

(1) Get the KTC 1400 section of your SOI.

(2) Turn to the Set (page) for the time period you are using (01). See Figure 9-6.

(PROTECTIVE MARKING)
SET 01 PERIOD 01

KTC 1400 D

LINE INDICATOR COLUMN	ABC 0	DEF 1	GHI 2	KL 3	NO 4	PQR 5	ST 6	UV 7	WX 8	YZ 9
A	IMKY	QOC	PAU	WH	LX	FSD	RB	VN	EG	JT
B	MYNJ	RDH	OBA	WP	CI	ETG	SQ	UF	KV	XL
C	SWLN	VJM	EXB	KO	UA	RYD	TE	FI	PQ	CG
D	BJYM	GPP	OIT	KC	SR	DOV	XE	UA	QH	NW
E	WAHY	CUR	KMQ	XO	TS	EIG	JP	FN	BL	DV
F	VKLY	BOA	FEX	HR	JN	CUS	DM	GT	PI	WO
G	MYRL	NEP	WSC	HX	IF	BDJ	KQ	OG	TA	VU
H	UWXG	CQR	OMT	YB	HP	VES	FJ	LN	AD	KI
I	RILN	HVB	WGD	PE	MS	ATQ	CK	XU	YO	JF
J	LEGX	SWY	MNR	DC	KF	VUH	JO	TB	QI	AP
K	WTOD	SRF	VEQ	LU	GK	HNA	YJ	PX	BC	MI
L	OHXL	SJI	QNK	GC	YF	TUD	WE	RA	BV	PM
M	CVGB	YIM	SHE	TU	JL	ODQ	KN	PX	RF	AW
N	SEDL	AFT	WJG	NR	XB	UHP	MV	YI	KO	OC
O	DGVK	ASM	RUY	JQ	HT	BPN	CL	EX	IF	OW
P	EPOW	GTR	HJK	YS	IF	UBC	DX	MN	OL	AV
Q	EUOM	PXD	SQG	TA	NF	WHJ	VR	BI	CK	LY
R	LESV	JWX	HOR	YF	QC	ATU	BP	MN	DG	KI
S	BQMO	NTI	XSG	CL	WY	AHV	JU	FR	ED	KP
T	UNYT	GOV	EAS	PJ	QL	DHX	FW	CI	MR	KB
U	BSFP	MKT	QWL	IJ	UO	HCR	VD	GX	AE	NY
V	EYHX	OID	VMN	AC	FU	KPS	TB	WG	RL	JQ
W	EBLA	SQU	POV	IW	GN	CJX	YD	RF	TM	HK
X	PXVN	KLS	WCD	YO	FB	REI	UM	TJ	AH	QG
Y	MTXO	JGD	FPH	VU	QR	LKS	CY	EA	BW	IN

Annotations on the left side of the table:

- LINE INDICATOR COLUMN: points to the first column (A-Y).
- FIRST LETTER IN CHALLENGE: points to the letter 'C' in the first column.
- SECOND LETTER IN CHALLENGE: points to the letter 'E' in the second column.
- REPLY: points to the letter 'X' in the third column.

Figure 9-6. KTC 1400 Authentication Table.

(3) The challenge is any two letters (except Z), selected at random. Example: "CE."

(4) Find the first letter of the challenge ("C") in the Line Indicator Column on the left of the page.

(5) Read to the right on that line to find the

second letter ("H").

(6) Read the letter directly under the second letter ("L"). This is the correct reply to the challenge. If the first letter is "Y", go to the top of the sheet in the

same column to find the reply. Example: For challenge "YR", the reply is "X."